R EXD.

Vol. 9. Part 5. Pp. 73-92. 15th May, 1940.

IMP. INST. ENT.
— LIBRARY —
5 MAY 1940
ERIAL
PARATE
En. 344 B

THE PROCEEDINGS

OF THE

ROYAL ENTOMOLOGICAL SOCIETY OF LONDON

Series B.

TAXONOMY

(being the continuation of Stylops)

World List abbreviation: *Proc. R. ent. Soc. Lond.* (B)

CONTENTS

	PAGE
CAMERON, Malcolm, M.B., R.N., F.R.E.S. Descriptions of some of Motschoulsky's types of Oriental STAPHYLINIDAE (Col.) . .	85–89
CORBET, A. Steven, F.R.E.S. A revision of the Malayan species of *Chliaria* Mre. (Lepidoptera: LYCAENIDAE)	90–92
FLETCHER, T. BAINBRIGGE, R.N., F.L.S., F.R.E.S., F.Z.S. A new South American Plume-moth (Lepidoptera, ALUCITIDAE) .	83–84
MACFIE, J. W. S., M.A., D.Sc., F.R.E.S. CERATOPOGONIDAE (Diptera) from north-eastern Brazil	73–79, 3 figs.
WILTSHIRE, E. P., F.R.E.S. The Lepidoptera of the Lebanon. Addendum . . .	79–82

LONDON:

PUBLISHED BY THE SOCIETY AND

SOLD AT ITS ROOMS, 41, QUEEN'S GATE, S.W.7

Price 3s. 0d.

THE ROYAL ENTOMOLOGICAL SOCIETY OF LONDON

Founded, 1833. Incorporated by Royal Charter, 1885.

PATRON—HIS MAJESTY THE KING.

OFFICERS and COUNCIL for the SESSION, 1940-1941.

K. G. Blair, D.Sc., *President.*

G. Fox-Wilson.
J. C. F. Fryer, O.B.E., M.A. } *Vice-Presidents.*
N. D. Riley.

N. D. Riley, *Treasurer.*

O. W. Richards, M.A., D.Sc., *Secretary.*

F. J. Griffin, A.L.A., *Registrar.*

Other Members of Council.

E. A. Cockayne, M.A., M.D., F.R.C.P.
C. N. Hawkins.
Col. F. A. Labouchere.
Hugh Main, B.Sc.
Sir Guy A. K. Marshall, C.M.G., D.Sc., F.R.S.
A. M. Massee, D.Sc.
The Hon. Miriam Rothschild.
J. Smart, B.Sc., Ph.D.
W. R. Thompson, Ph.D., D.Sc., F.R.S.
B. P. Uvarov, D.Sc.
A. Welti.
V. B. Wigglesworth, M.A., B.Ch., M.D., F.R.S.

Finance and House Committee.

A. Welti (Chairman).

Brig.-Gen. B. H. Cooke, C.M.G., C.B.E., D.S.O.
C. N. Hawkins.
Francis Hemming, C.M.G., C.B.E.
R. W. Lloyd.
J. Smart, B.Sc., Ph.D.

Publication Committee.

V. B. Wigglesworth, M.A., B.Ch., M.D., F.R.S. (Chairman).

E. A. Cockayne, M.A., M.D., F.R.C.P.
G. Fox-Wilson.
A. M. Massee, D.Sc.
Hugh Scott, M.A., Sc.D.
W. R. Thompson, Ph.D., D.Sc., F.R.S.

Library Committee.

B. P. Uvarov, D.Sc. (Chairman).

E. B. Britton.
B. M. Hobby, M.A., D.Phil.
R. W. Lloyd.
W. H. T. Tams.
W. R. Thompson, Ph.D., D.Sc., F.R.S.

Committee for the Protection of British Insects.

W. G. Sheldon (Chairman).

Capt. E. Bagwell-Purefoy.
C. L. Collenette.
W. J. Dow.
J. C. F. Fryer, O.B.E., M.A.
Col. F. A. Labouchere.
N. D. Riley.
H. M. Edelsten (Secretary).

The Executive Officers of the Society are *ex-officio* members of all Committees.

DELEGATES OF THE SOCIETY TO:

1. **British National Committee for Biology** (Royal Society).
   Sir Guy A. K. Marshall, C.M.G., D.Sc., F.R.S., appointed 1939.
   Dr. Karl Jordan, F.R.S., appointed 1936.
2. **Conference of Delegates of Corresponding Societies of the British Association for the Advancement of Science.**
   Mr. H. B. Cott, M.A., appointed 1939.
3. **International Congress of Entomology** (Berlin 1938).
   J. C. F. Fryer, O.B.E., M.A. *Francis Hemming, C.M.G., C.B.E.*
   A. D. Imms, M.A., Sc.D., F.R.S.
4. **Local Committee of Management of Wicken Fen.**
   Mr. H. M. Edelsten. *Mr. E. C. Bedwell.*
   [Delegates nominated by Committee for the Protection of British Insects.]
5. **National Trust for Places of Historic Interest or Natural Beauty.**
   Mr. W. G. Sheldon, appointed 1922.
6. **New Forest Association.**
   Mr. W. Fassnidge, appointed 1934.
7. **Royal Meteorological Society. Phenological Committee.**
   Dr. C. B. Williams, appointed 1937.

CERATOPOGONIDAE (DIPTERA) FROM NORTH-EASTERN BRAZIL

By J. W. S. Macfie, M.A., D.Sc., F.R.E.S.

This collection of midges was made during the years 1934 and 1935 by Prof. Fr. Lenz in the arid districts of north-eastern Brazil which lie in the states of Rio Grande do Norte, Parahyba, and Pernambuco. Most of the specimens had been reared from early stages found in pools, ponds, and lagoons, and some of them are probably teneral. All of them had been preserved in alcohol and were in an unusually good state for examination, but in consequence some may have become partially discoloured. These facts must be remembered when reading the descriptions which follow, and when attempting to identify by means of them other, perhaps more mature, specimens.

The collection consists of 90 specimens which are referable to 8 different species, namely, one species each of *Atrichopogon*, *Dasyhelea*, *Johannsenomyia*, *Sphaeromias*, *Palpomyia*, *Bezzia* (*Probezzia*), *Bezzia* (*? Crespinia*), and *Bezzia* (*Nilobezzia*). Six of the species are new so far as I can ascertain, and those referable to the genera *Sphaeromias*, *Probezzia*, *? Crespinia*, and *Nilobezzia* are, I believe, the first of their kind to be recorded from South America. The majority of the specimens are of the species of *Atrichopogon* (39), and *Dasyhelea* (38).

The method of description adopted is that which I have used in a number of recent papers. The measurements given are not averages, but those of individual insects selected for detailed examination. The unit used is approximately 3·7 μ.

All the types of the new species described are in the collection of the British Museum.

I have to thank Prof. Fr. Lenz for kindly giving me the opportunity to examine the collection.

Atrichopogon insignipalpis sp. n.

A dark brown species with blackish spots on the thorax and abdomen, and with paler, yellowish-brown, scutellum and legs : resembling *A. flumineus* Macfie, but with two spermathecae, and differing also as indicated below.

♂♀. Length of wing about 1·5–1·6 mm., greatest breadth 0·5–0·6 mm.

Head very dark brown. Eyes apparently bare. Palpi darkish brown, long and slender, the third segment slightly inflated distally, with a small deep pit : lengths of last three segments in one male about 33, 14, and 17 units, and in one female about 40, 20, and 21 units respectively. Antennae of male with torus and last three segments darkish brown, others yellowish-brown, but distal ones more or less infuscated at tips. Plume well developed, brown. Segments 4–12 successively longer and narrower, each bearing a whorl of hairs, their lengths ranging in one specimen from about 11 to 16 units; 13–15 elongate, without whorls, their lengths in the same specimen about 45, 35, and 39 (including stylet of about 5 units) units respectively. Antennae of female with torus and basal segments rather pale, yellowish-brown, and last five segments uniformly darkish brown : segments 4–10 all broader than long, ranging in one specimen from 8 by 13 to 9 by 12 units; 11–14 more elongate, sub-equal, about 32 by 10 (middle) units; 15 about 43 (including stylet of about 6 units) by 10 units. The combined lengths of segments 3–10, 4–10, and 11–15 about 72, 59, and 171 units respectively. *Thorax* very dark brown above, with somewhat paler shoulder areas, and traces of usual scutal adornment. Scutellum paler, yellowish, bearing in male 4, in female 6 yellowish bristles, and numerous small hairs. *Wings* un-

adorned, the veins quite pale. No macrotrichia in male, and very few bristles on radial veins. In female macrotrichia numerous at tip and along posterior margin including anal cell; perhaps rather more abundant than in *A. flumineus*, and extending almost to base along Cu and anal veins. Anal lobe well developed, but not as large as in *A. flumineus*. Costa extending about four-fifths length of wing in female, two-thirds in male. Both radial cells well formed : second fully four times as long as first. Petiole of M about same length as cross-vein. Fork of Cu at about same level as that of M. Angle formed by branches of Cu less than a right angle. Halteres with pale or brownish knobs. *Legs* almost uniformly yellowish-brown, but in some specimens with trace of a dark band about middle third of tibiae at any rate. The specimens may mostly be teneral, or discoloured by long preservation in alcohol. T.R. about 2·6. Form of segments, claws, and empodium normal. *Abdomen* with tergites very dark brown or blackish at sides and (discontinuously) posteriorly; and venter yellowish-brown. Cerci yellowish-brown. Spermathecae 2, not very highly chitinised, oval, rather unequal, in one specimen total length about 75–80 μ (of which about 7 μ may be regarded as the sclerrtised commencement of duct), and greatest breadth about 45–50 μ. Hypopygium of usual form without any very characteristic feature. Aedeagus forming a wide arch. Ninth sternite not excavated in middle line posteriorly, bearing a good many (about 15) bristles in two irregular rows.

Soledade : 1 ♀ Ufer Algenbewuchs. (kl. Chiron); 13 ♀♀ 8 ♂♂ Baumstumpf, üb. Wasser; 4 ♀♀ 8 ♂♂ Baumrinde; 2 ♀♀ 1 ♂ An Holz; 2 ♀♀ Simão. An Felsen.

This insect resembles *Atrichopogon flumineus* Macfie in many respects, but may be distinguished as indicated above. It also resembles *A. chilensis* Ingram & Macfie in which, too, there are two spermathecae, and the wings bear numerous (but perhaps not quite so numerous) macrotrichia. In *A. chilensis*, however, the eyes are clearly hairy, the palpi are much shorter, the basal segments of the antennae in the female are less disc-like, all being either sub-spherical or oval, and the last antennal segment has a much shorter stylet.

Dasyhelea parahybae sp. n.

A small dark brown species with the legs and scutellum pale brown, and the last segment of the antennae with a stylet.

♂♀. Length of wing about 1·1 mm., greatest breadth 0·3–0·4 mm.

Head very dark brown. Eyes hairy. Palpi almost colourless, third segment without pit : lengths of last three segments in both sexes about 16, 6–7, and 7–10 units respectively. Antennae dark brown especially at tips, torus very dark, the flagellum segments sculptured. In male : segments 4–11 measuring in one specimen from 11 by 13 to 11 by 9 units; 12–14 binodose, lengths about 26, 18, and 16 units respectively; 15 about 28 (including stylet of about 5 units) by 8 units. In female : segments 4–14 from sub-spherical to flask-shaped, forming a practically continuous series, measuring in one specimen from 9 by 9 to 13 by 7 units; 15 longer, about 22 (including stylet of about 5 units) by 7 units. The combined lengths of segments 3–10, 4–10, and 11–15 about 80, 60, and 75 units respectively. *Thorax* dark brown, with traces of usual scutal adornment. Scutellum pale brown, bearing about 7–8 bristles, and 2–4 small hairs. *Wings* unadorned, the veins only slightly infuscated. Macrotrichia covering much of wing membrane, in female extending to base between M and Cu, but leaving well-defined bare areas along veins. First radial cell obliterated; second small, almost square in male, but longer than broad in female. Fork of Cu in male at about same level as end of costa, in female slightly proximal to this level. Halteres with somewhat infuscated knobs. *Legs* almost colourless, but actual knees dark brown, the fifth segment of tarsi more or less infuscated, and (in some specimens) with traces of brown markings on femora. T.R. in both sexes from about 2·6 to nearly 3. *Abdomen*

dark brown, but not as dark as scutum; the tip also dark, not pale. Spermatheca single, rather feebly chitinised, somewhat pyriform with duct portion slightly oblique, total length about 71 μ (of which about 18 μ represents the chitinised part of duct), and greatest breadth about 53 μ. Hypopygium similar to that of *D. ampullariae* or *D. nyasae*. Ninth sternite without bristles, not produced in middle line posteriorly. Ninth tergite with the finger-like processes at posterior angles rather short, highly chitinised, dark brown, each armed with a single, short, spine-like, bristle; hairy processes rather indistinct, but apparently not long as they are in *D. ampullariae*. Side-pieces normal; claspers entirely dark brown, with ends more expanded than they are in *D. ampullariae*. Harpes and aedeagus as in *D. ampullariae*.

Simão. An Felsen, 19 ♂♂ 18 ♀♀; Doublo. Kl. Tümpel, 1 ♀.

This species resembles the Malayan species *Dasyhelea ampullariae* Macfie. There are, however, a few points of difference, for example, the form of the spermatheca of the female, and of the clasper of the male, and for this reason, as well as because the localities are so far apart, it seems advisable to describe it under a new name.

Johannsenomyia latifemoris Ingram & Macfie.

Simão No. 1. Ufer. Zwischen Algenwatten. Oberende, 1 ♀ 1 ♂; Piabas. Z. I. 4, 3 m d. oben u. Z IV. O, 4 m. 1 ♀; Prata. Z III. 1, 20 m., 1 ♀; Mundo Novo, An Holz, 1 ♂, Z. II. 4, 8 m. 1 ♀; Doublo. U. Z. II. 4, 8 m. 1 ♂.

The females, although incomplete and probably teneral in some cases, correspond well with the description given by Ingram and Macfie (1931) of a specimen taken at Buenos Aires, and also with two specimens kindly sent to me in 1938 by Prof. A. Thienemann which had been procured in North Brazil. The abdomen has in some specimens a greenish tint which, in life, may be more distinct.

The males correspond well with two males sent by Prof. Thienemann with the females referred to above, which, it was presumed, were the males of the species. The male, which has not previously been described, agrees in most characters with the female, but is smaller and darker. The following points, however, may be noted about it.

Length of wing 1·5–1·9 mm., greatest breadth 0·5–0·6 mm. Antennae almost uniformly darkish brown, with scanty plume: segments 4–11 oval, ranging in one small specimen from 13 by 11 to 15 by 8 units; 12–15 more elongate, lengths about 18, 30, 37, and 37 units respectively, the last without stylet. Scutal tubercle rather large, pointed. Wings with second radial cell shorter, not quite twice length of first. Distance between bases of M1 and M2 less, about same as length of cross-vein. Legs darker: femora and tibiae entirely dark brown on all legs, but those of fore legs not as dark as the others. Femora of hind legs thickened, but only slightly. All femora unarmed. Fifth tarsal segments apparently armed on all legs, but spines fewer and less distinct. Claws on all legs small, equal, each bifid at tip. Abdomen much darker than in female, dark brown, sometimes with greenish tint. Hypopygium very dark brown, closely resembling that of the species described below under the name *Sphaeromias limnochares*. Ninth segment short: tergite with a pair of conical hairy processes posteriorly; sternite somewhat excavated in middle line posteriorly. Sidepieces long and narrow, very oblique; claspers long and narrow, ending in a strong claw-like process. Harpes as in *Sphaeromias limnochares*, but expanded portion rather larger, and extremity less pointed and more obviously fimbriated. Aedeagus U-shaped in ventral view, highly chitinised at tip and at sides: the membrane joining it to the ninth sternite spiculate.

This male and that described below as *Sphaeromias limnochares* are so similar that it is difficult to believe the two insects belong to different genera. They differ in only one important respect, namely in that the one has all the femora unarmed whereas the other has spines on the fore femora. Following the classification instituted by Kieffer, and followed substantially by all subsequent workers on the group, it is, however, necessary to refer the former to the genus *Johannsenomyia*, and the latter to *Sphaeromias*.

Sphaeromias limnochares sp. n.

A rather small, dark brown species, with the femora and tibiae darkish brown, only the fore femora armed, and the fifth segments of all the tarsi unarmed.

♂. Length of wing about 1·16 mm., greatest breadth 0·4 mm.

Head dark brown. Eyes bare. Palpi almost colourless, small, the third segment without pit: lengths of last three segments about equal, 9–10 units. Antennae with torus dark brown, flagellum segments (especially middle series) pale brown, and plume scanty, pale brown: segments 4–11 oval, ranging from about 11 by 9 to 13 by 6 units; 12–15 more elongate, with infuscated distal halves, lengths about 17, 25, 29, and 35 units respectively, the last without stylet. *Thorax* dark or very dark brown. Scutal tubercle quite small, and rather blunt. Scutellum dark brown, bearing numerous small hairs, and one or two larger bristles. *Wings* pale, the veins colourless. Tip rounded; anal angle moderately well formed. No macrotrichia, and bristles only along costa—none on radial veins. Fringe normal, not extending to alulae. Costa extending about three-quarters length of wing, ending at about same level as end of Cu1. Both radial cells well formed: second tapering distally, about twice as long as first. R2 is indistinct on one wing, but is clearly present on other. M just sessile, that is, the fork at nearly same level as cross-vein. Fork of Cu slightly distal to level of cross-vein. Halteres with brownish knobs. *Legs* with femora and tibiae (especially those of four posterior legs) almost uniformly darkish brown, not banded. Tarsal segments pale brown excepting the last, which is infuscated. Femora of fore legs armed with 2 small spines; other femora unarmed. T.R. about 2·1. Fourth segment of all tarsi sub-cylindrical, not cordiform or bilobed: fifth unarmed. Claws small, equal, bifid at tips, but without barbs. *Abdomen* dark brown, but not as dark as thorax. Hypopygium (fig. 1) with ninth sternite devoid of bristles. Ninth tergite short, with long hairy lateral processes posteriorly. Side-pieces long and narrow, directed obliquely. Claspers narrow, each ending in a strong claw. Aedeagus more or less triangular, with the tip and sides highly chitinised: membrane joining it to ninth sternite spiculate. Harpes well chitinised, relatively narrow rods, somewhat expanded a little before distal end, and terminating in a curved, narrow process which is somewhat fimbriated at tip.

Canna Fistula. 2. Uferschlamm, 1 ♂.

So far as I am aware no species of this genus has previously been recorded from the neotropical region.

Palpomyia maculicrus Ingram & Macfie.

Simão. 1. Ufer. Algenwatten, 1 ♀; Doublo. u. Z. II. O, 5 m., 1 ♀.

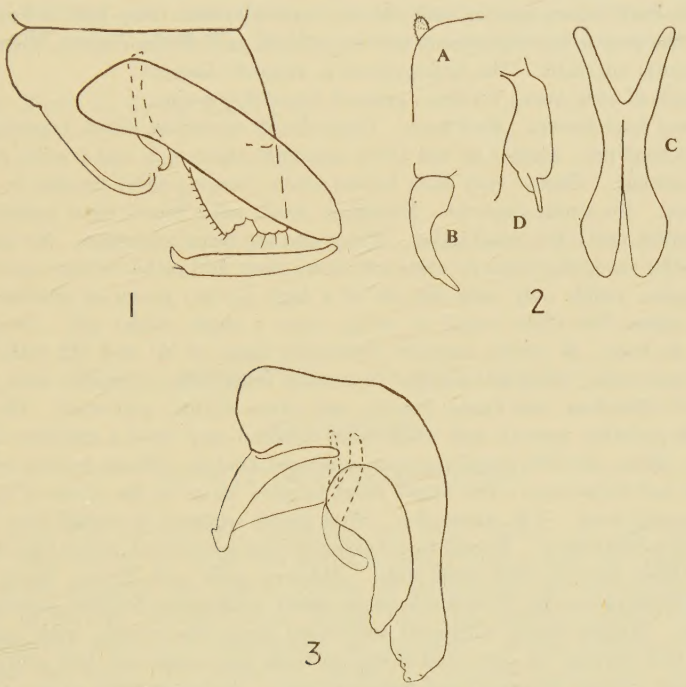
These specimens correspond well with the description given by Ingram and Macfie (1931), but are much paler in colour, perhaps because they are teneral, or as a consequence of long preservation in alcohol. They possess no appreciable scutal tubercle, but merely a minute knob; and the spines on the femora are in these specimens 7–11, 2–3, and 1–2 on the fore, middle, and hind legs respectively. The fourth tarsal segments, although short, are not really cordiform or bilobed, and it is therefore doubtful if the species is correctly referred to *Palpomyia*. It should perhaps be considered rather a species of *Sphaeromias*.

Bezzia (Probezzia) telmatophila sp. n.

A dark brown species with almost colourless legs, all the femora and fifth tarsal segments unarmed, and the T.R. about 1·6.

♂. Length of wing about 1·7 mm., greatest breadth 0·5 mm.

Head dark brown. Eyes bare. Palpi almost colourless, short, the third segment without pit: lengths of last three segments about 12, 8, and 10 units respectively. Antennae missing. *Thorax* very dark brown above; clothed with short bristles in addition to minute hairs. Scutal tubercle (fig. 2, A) short but almost finger-like, covered with minute hairs. Scutellum paler brown than scutum, bearing apparently only 2 median bristles. *Wings* and the veins colourless. No macrotrichia, and no bristles excepting a sparse row along costa. Microtrichia minute, visible only with the aid of a high ($\frac{1}{12}$-in.)



FIGS. 1–3.—1, *Sphaeromias limnochares* sp. n. Hypopygium, lateral view; 2, *Bezzia* (*Probezzia*) *telmatophila* sp. n. A, scutal tubercle. B, clasper. D, aedeagus, lateral view. C, harpes, ventral view (at greater magnification); 3, *Bezzia* (*? Crespinia*) *ateles* sp. n. Hypopygium, lateral view.

power of microscope. Costa extending about three-quarters length of wing; only a single radial cell. Fringe normal. M sessile, distance separating bases of M1 and M2 almost equal to length of cross-vein. Fork of Cu at about same level as cross-vein. Halteres with brownish knobs. *Legs* almost colourless (but specimen perhaps teneral). All femora, tibiae, and fifth tarsal segments unarmed; but tibiae of hind legs with a few rather long bristles. T.R. about 1·6. Form of segments normal; all femora slender. Fourth tarsal segments short, more or less cordiform but not bilobed. Claws very small. *Abdomen* darkish brown but not as dark as thorax. Hypopygium with claspers (fig. 2, B) attenuated distally and ending in an almost finger-like process. Harpes in ventral view as shown in the figure (fig. 2, C) the ends somewhat dilated and feebly chitinised. Aedeagus (fig. 2, D)

in ventral view triangular or shield-shaped, with a delicate median process projecting posteriorly from just behind the tip.

Riacho do Atalho, Zwischen Sträuchern, 1 ♂.

This species, and the one which follows immediately after it (*Bezzia ateles* sp. n.), are described with reluctance because only a single specimen of each is available for study, and they are, moreover, without antennae, and are probably teneral and may differ in appearance from more fully matured specimens. Both insects are males. It is because in each the hypopygium presents unusual features, which should be readily recognisable again, that the species are briefly described.

Bezzia (? Crespinia) ateles sp. n.

A small, dark brown species with the legs and abdomen very pale brown or almost colourless, the fourth tarsal segments sub-cylindrical, and all the femora, tibiae, and fifth tarsal segments unarmed. The hypopygium is without claspers.

♂. Length of wing about 1·3 mm., greatest breadth 0·4 mm.

Head very dark brown. Eyes bare. Palpi almost colourless, short, tapering, the third segment without pit: lengths of last three segments about 8, 5, and 6 units respectively. Antennae missing. *Thorax* very dark brown above, bearing short bristles in addition to minute hairs. No scutal tubercle. Scutellum much paler brown than scutum; bearing about 7 bristles, and a few small hairs. *Wings* and the veins colourless. No macrotrichia, and no bristles excepting those on costa which are short and rather widely spaced. Microtrichia minute, visible only with the aid of a high ($\frac{1}{12}$-in.) power of microscope. Costa extending about four-fifths length of wing; only a single radial cell. Fringe normal, extending to base. M sessile, distance separating bases of M1 and M2 rather less than length of cross-vein. Fork of Cu distal to level of cross-vein. Halteres with pale knobs. *Legs* almost colourless, but knees, femora, and tibiae slightly yellowish. The specimen, however, is probably teneral, and when more matured may have a different appearance. All femora, tibiae, and fifth tarsal segments unarmed, that is, without definite spines, for all the femora and tibiae bear a few rather stout bristles, those on the tibiae of the hind legs being especially long. T.R. about 2·4. First tarsal segment of middle legs (but not of others) with a basal spine. Fourth tarsal segments sub-cylindrical, about two-thirds length of fifth. Claws normal, with bifid ends. *Abdomen* quite pale brown, much paler than thorax. Hypopygium (fig. 3) with side-pieces small, with scanty bristles, tapering distally: no claspers. Harpes highly chitinised rods fused about the middle, with basal portions separated and forming an arch, and distal portions also separated, but contiguous, with rounded, and slightly expanded and flattened ends. Aedeagus more or less triangular in ventral view, with a conical, cap-like, end.

Mundo Novo. An Holz, 1 ♂.

Bezzia (Nilobezzia) neotropica sp. n.

A brown species with the abdomen much paler than the thorax, and all the femora, tibiae, and fifth tarsal segments armed.

♀. Length of wing about 2·2 mm., greatest breadth 0·7 mm.

Head rather dark brown. Eyes apparently bare. Palpi pale brown, third segment without pit: lengths of last three segments about 15, 9, and 13 units respectively. Antennae almost uniformly brown, but last five segments rather darker than basal segments and torus: segments 4–10 sub-cylindrical, sub-equal, about 14 by 6–7 units; 11–14 more elongate, sub-equal, about 26 by 6 (middle) units; 15 about 35 by 6 (middle) units, without a definite stylet. The combined lengths of segments 3–10, 4–10, and 11–15 about 118, 95,

and 140 units respectively. *Thorax* darkish brown, with a few strong bristles above wings. No scutal tubercle. Scutellum paler brown than scutum. *Wings* pale, the veins colourless. No macrotrichia, and no bristles excepting short ones on costa. Costa extending about four-fifths length of wing; the single radial cell narrow distally. M sessile, the distance separating bases of M1 and M2 rather greater than length of cross-vein. Fork of Cu at about same level as cross-vein. Fringe normal, extending to base. Halteres with pale knobs. *Legs* with first four tarsal segments almost colourless, and other segments almost uniformly brownish. All femora and tibiae armed with a few spines which, however, are not very clearly differentiated from short, stout bristles. Form of segments normal. T.R. about 2·7. Fourth tarsal segments on all legs sub-cylindrical; fifth armed with about a dozen spines. Claws on all legs long, equal, each with a large external barb. *Abdomen* pale brown, much paler than thorax. I can detect no gland rods. Spermathecae 3, not very highly chitinised, oval, rather unequal, measuring in the specimen examined about 89 μ by 68 μ, 75 μ by 57 μ and 61 μ by 53 μ; the duct chitinised for only a short distance, about 5 μ.

Mundo Novo. Z. IV. 3, 3 m., 1 ♀.

THE LEPIDOPTERA OF THE LEBANON

ADDENDUM

By E. P. Wiltshire, F.R.E.S.

A paper with the above title appeared in 1939, *Trans. R. ent. Soc. Lond.* **88** : 1–56, and owing to both its authors being prevented by absence from England from revising the galley-proofs, it unfortunately contained not only a number of minor typographical errors but also several serious omissions, necessitating the issue of a subsequent Addendum. It was suggested that this should take the form of a separate paper, not merely correcting the original work but, as far as might be practicable, bringing it up to date. The present paper is the result of my agreeing to this suggestion.

Mr. Ellison, my co-author, has communicated to me the text of the comments on the species of Rhopalocera which were unfortunately omitted, but otherwise the following lines are my own.

In excusal of the imperfections of the original work it should be stated here that the original manuscript was transmitted to the Society in 1936, and during the interval before actual publication was considerably revised by postal communication from abroad. In compiling this Addendum I am indebted to Dr. H. G. Amsel for some helpful comments on the sections Pyralididae and Microlepidoptera; and to Mr. Abdul-Mun'im S. Talhouk of Aley, Lebanon, for recently allowing me to see a number of his catches, including some interesting additions to the Lebanon list. I should also here record my debt to Mr. W. H. T. Tams for photographing the moths figured, and for other invaluable assistance.

ADDENDA AND CORRIGENDA.

page 2. Dr. Amsel's principal later works on the Lepidoptera of Palestine are: "Weitere Mitteilungen über palästinensische Lepidopteren" (1935, *Veröff. deuts. kolon. Mus. Bremen* **1** : 223) and "Neue palästinensische Lepidopteren" (1935, *Mitt. zool. Mus. Berlin* **20** : 271). In the former of these, mention is made of *Autophila cerealis* (cf. p. 42 of our "Lepidoptera of the Lebanon"). Dr. Amsel also informed me that he plans to publish a revised list of Palestinian Lepidoptera, adding the latest additions and omitting the doubtful old records.

page 3, line 25. after "records" insert "of".

page 4, line 49. for "*obeliscata*" read "*obeliscota*".

page 5, line 15. for "*ellisori*" read "*ellisoni*".

page 5. REPRESENTATION OF THE DIFFERENT FAMILIES.

Some of the figures given under this heading were not correct, but since the present paper introduces several additions, it is simpler to restate the numerical representation, this time not giving the separate numbers of the sub-families of ARCTIIDAE :—

Rhopalocera	133	NOTODONTIDAE	5
SPHINGIDAE	17	THYATIRIDAE	1
ZYGAENIDAE	14	COSSIDAE	7
ARCTIIDAE	17	AEGERIIDAE	6
LYMANTRIIDAE	7	PSYCHIDAE	6
THAUMETOPOEIDAE	2	AGROTIDAE	261
LASIOCAMPIDAE	6	GEOMETRIDAE	124
LEMONIIDAE	1	PYRALIDIDAE	119
DREPANIDAE	2	Other Microlepidoptera	54
SATURNIIDAE	1		
		Total	783

page 5, line 16, insert :—

I. By G. Warnecke.

Nola impura wiltshirei.

page 9, last line. for "locality." read "locality :— "

page 12, before line 6, insert the following :—

Pieris ergane Hübn. ssp. Not rare at Bsherre Cedars and elsewhere in the mountains. It has been recorded from Afka but I know no certain record from further south.

Pieris napi subsp. *pseudorapae* Ver. Principally found in the valleys near the sea coast; even there it is local, though common where it occurs. Occasional specimens occur at Middle Heights (Aley) and in the Bekaa.

Pontia daplidice (L.). Common everywhere. The extreme summer form with reduced markings on the underside occurs, but not exclusively, as I have taken typical specimens at the same time and place.

Glycestha aurota Fab. (= *Belenois mesentina* auctt.). On the sea coast, chiefly in late September and October. It must, I think, be an immigrant from the south, as it is quite scarce in some years, and appears in others in thousands. The American University campus is a favourite locality, and W. has noted the larvae there in numbers in early autumn.

Synchloe callidice Esp. subsp. *chrysidice* H.-S. Only known from the highest parts of the Cedar Mountain, at 10,000 feet or more. The males fly in numbers on the bare stony summits, but the females are usually found a

little lower down where the food-plant grows. Fresh specimens occur throughout June, July, and August, though I believe there is only one brood. Perhaps the gradual melting of the snow from off the food-plant causes a gradual emergence, though this does not seem to be the case with other mountain-species such as *A. ellisoni, isaurica,* and *chiron.*

Euchloe belemia Esp. I only know of this from the sea coast. I have frequently taken it at Ras Beirut, and there are records from the Dog River and Tripoli. The American University has a good series from Sidon. Most specimens were taken in the spring but W. took one in December.

page 15, line 46. for " nearly " read " early ".
page 17, line 15. for " *Olycaena* " read " *Lycaena* ".
page 18, line 32. for " *irkrama* " read " *vikrama* ".
page 22, line 12. for " 1939 " read " 1929 ".

page 23. SPHINGIDAE.

Acherontia atropos L. Recorded by Talhouk, as having been bred by Brother Cremona at Ksara. This is the only one of Talhouk's additions to the Lebanon list which I include here without having actually seen it.

page 25, line 18. for " (1935) " read " (*1935) ".
page 25, line 37. for " (1936) " read " (*1936) ".
page 26, line 18. for " *chlamydulalis* " read " *chlamitulalis* ".
page 26, lines 22 & 24. for " *Paedia* " read " *Paidia* ".
page 27, after line 11, insert :—

Phragmatobia fuliginosa L. ssp. ? *placida* Friv. Dog River and Amik, June and October (W).

page 29, after line 7, insert :—

THYATIRIDAE.

Diloba caeruleocephala L. Aley, 5.xii.35 (Talhouk).

page 30, after line 18, insert :—

Bryophila strigula Bkh. Middle Heights, Aug. to Oct.

page 30, last line. for " Bsherre " read " Bsherre Cedars ".
page 33, line 21. for " *squaliorum* " read " *squalorum* ".
page 34, after line 48, insert :—

Polia consanguis Guen. Coast to Middle Heights, June to August.

page 35, line 11. for " *lythargyria* " read " *lithargyria* ".

page 35, line 14. *Sideridis vitellina* Hübn. It should be added that the ordinary form also occurs in Syria, as proved by an example taken by Talhouk at Zahle on 15.vi.38.

page 35, line 36. for " *Elephina* " read " *Elaphria* ".
page 35, line 46. for " mid-July, J (Brsn.) " read " mid-July. J (Brsn.) ".

page 36, line 25. *Meganephria oxyacanthae* (L.) subsp. *benedictina* Stgr. Also taken at Shtorah, 23.xi.33 (W).

page 36, after line 33, insert :—

Dryobotodes protea Esp. Taken by Talhouk at Aley in December. A grey and black specimen. It is not surprising to find the green tint missing from examples from those regions where the oak trunks never acquire the green due to damper weather. A somewhat similar form occurs in the Zagros woods of West Persia (Chihar Zabar Pass, near Kermanshah, 6.xi.39).

page 36, after line 39, insert :—

Antitype schwingenschussi Draudt. Bsherre Cedars. This is the species which many authors called *apora* Stgr. until Boursin's investigation of the type of the latter showed it to be a synonym of *Crymodes bischoffi* H.-S. and made a new name necessary. Draudt named it as above in Seitz, 1937, *Grossschmett. Erde* (*Suppl.*), **3.**

page 37, line 49. for " 9.viii.35 " read " 9.i.35 ".

page 37. It may here be added that this race, *Amathes macilenta rubrescens* Wilts., also occurs in Persia : Kermanshah. 4.xi.39.

page 41, after line 36, insert :—

Catocala conjuncta Esp. Shweir, Sept. to sugar and light (W).

page 42, line 7. for " Warr." read " Bugn.".

page 43, line 25. for " *Myidodes* " read " *Myinodes* ".

page 45, after line 16, insert :—

Sterrha politata Hübn. Shweir, July and August; the typical form (W).

page 46, line 1. for " *subvicinaria* " read " *vicinaria* ".

page 46, line 4. for " Schawerda " read " Schwingenschuss ".

page 46, line 29. delete brackets.

page 47, lines 1 & 2. for [square brackets] read (round brackets).

page 48. *Dasycorsa modesta* Stgr. The Lebanese males are of a rich reddish-purple hue, and very different in aspect from the ashen brown or lilac of the Anatolian and Zagros males. I suggest the name **Dasycorsa modesta** subsp. **marerufa** subsp. n., for the Lebanese race. Holotype and paratypes in my collection.

page 49, line 7. for " *subtamicus* " read " *subtauricus* ".

page 50, line 37. for " *Thyridophera* " read " *Thyridophora* ".

page 51, line 28. for " *Treptopteryx* " read " *Tretopteryx* ".

page 52, line 14. for " Biada " read " Baida ".

page 53, line 9. for " Warnecke " read " Wck.".

page 53, line 23. (*Pionea perfervidalis* . . .) should be deleted.

page 53, line 36. for " and " read " end ".

page 54. According to Dr. Amsel *Phtheochroa psychodora* Meyr. is a synonym of *Epiblema dalmatana* Rebel.

page 54, line 30. for " Kal." read " Kennel.".

page 55. According to Dr. Amsel, *Limnoecia copidobathra* Meyr. is a synonym of (*Stagmatophora*) *fulguritella* Rag.

page 56, line 21. for " *obeliscata* " read " *obeliscota* ".

page 56, line 31. after B.-Salz insert (X 2).

page 56, line 32. for " Strgr." read " Staudinger ".

A NEW SOUTH AMERICAN PLUME-MOTH (LEPIDOPTERA, ALUCITIDAE)

By T. Bainbrigge Fletcher, R.N., F.L.S., F.R.E.S., F.Z.S.

Oidaematophorus chionoptila sp. n.

♂. Expanse 23 mm. *Head* white, crown finely sprinkled with dull ferruginous.

Antenna white above, scape moderate, flagellar segments slightly dilated apically with rough scales, ciliations slightly over 1 [segments 2–7 with minute dots, which are blackish and sharply marked on segments 2–4, ferruginous and indistinct on segments 5–7].

Labial Palpus porrect, slender, rather longer than breadth of eye, white: second segment slightly curved, with a slight pale-fuscous-ferruginous streak exteriorly; third segment shorter than second, straight, apex moderately acute, suffused exteriorly with pale fuscous-ferruginous.

Thorax snow-white.

Abdomen snow-white: central third with a dorsal streak of pale fuscous, black-tipped scales; a lateral pale-fuscous streak extending on sixth segment downwards and across venter, which is pale yellowish-white on preceding segments; anal tuft long, white with slight admixture of pale fuscous-ferruginous.

Fore-leg white: femur suffused pale fuscous on inner side; tibia short, lined with black, with slight scale-dilatation at apex; tarsus, first segment slightly longer than segments 2–5, finely lined above with blackish or dark ferruginous, bases of segments also lightly ringed with pale ferruginous-fuscous.

Mid-leg white, lined black: tibia with projecting tuft of fine hair-scales at $\frac{1}{3}$, and at apex a pair of black-lined, blunt-tipped, black-pointed spurs, of which the inner is about twice length of outer; tarsal segments faintly banded ferruginous at bases.

Hind-leg long, slender, white, minutely dotted with pale fuscous-ferruginous: tibia on lower side with long white hairs [these long hairs not present in female], shorter beyond proximal pair of spurs, which are emitted at about $\frac{2}{3}$, are long and slender, blunt-pointed, black-tipped, outer spur about $\frac{2}{3}$ of inner, distal spurs slender, white, blunt-pointed and black-tipped, outer spur about $\frac{3}{4}$ of inner, which is approximately as long as outer proximal spur; tarsus, segment 1 longer than segments 2–5 together, segments 2–5 faintly banded pale-ferruginous at bases, ungues black.

Fore-wing rather narrow, cleft from slightly beyond $\frac{2}{5}$, first segment narrow, subfalcate, blunt-pointed, second segment narrow, blunt-pointed, termen oblique, slightly convex, tornus not evident: snow-white: costal area to base of cleft coarsely sprinkled with blackish ferruginous-fuscous scales and a very few similar scattered scales in disc; dorsal area below fold faintly tinted very pale brownish, with similar scattered scales most evident along fold from near base to $\frac{1}{4}$ and more posteriorly along dorsum; an aggregation of these dark scales forms a small blotch a little before and beneath base of cleft; first segment with a small but conspicuous, rather elongated, aggregation of blackish-fuscous scales on its base a little beyond and above base of cleft, a few scattered blackish scales along its central third, on its outer fourth vein 8 marked with pale ferruginous-brown, on its costa a small and rather faintly-marked blotch near base of segment opposite outer edge of basal blotch, a single black scale at $\frac{1}{3}$ of segment, and a small elongate mark at $\frac{2}{3}$, on its apex the extreme tip of vein 8 marked black, on its lower margin a small elongate black mark at $\frac{5}{6}$; second

segment, except on its basal half near its upper margin and on its outer half along termen, faintly tinted very pale brownish and sparingly irrorated with scattered blackish and dark-fuscous scales, its upper angle with a small blackish spot and a similar spot on extremity of vein 3 : cilia on costa very pale ferruginous except on central $\frac{2}{3}$ of first segment, where they are white, snow-white within cleft, on termen and dorsum [with a faint pale-ferruginous wisp at upper angle of second segment and a very faint discoloration at termination of vein 2].

Hind-wing cleft from $\frac{1}{3}$ and from near base, first and second segments narrow-lanceolate, third segment linear : white, first segment slightly dulled with very pallid ferruginous, second segment less so : tips of segments with a few black scales, those on third segment forming a conspicuous black tip ; basal half of third segment with a few black scales forming a conspicuous streak on its second fifth : cilia white.

Type ♂ (Fletcher Colln. 8954), Colombia : Sierra del Libano, 6000 feet, May 1899, *H. H. Smith*, Wlsm. Colln. 68855, now in British Museum ; cotype ♂ (Fletcher Colln. 8953) from same locality ; paratype ♂ (Wlsm. Colln. [6] 8857), in British Museum, from same locality ; paratype ♂ (Wlsm. Colln. 68856), in British Museum, from same locality ; paratype ♂ (Fletcher Colln. 10222), Peru : San Domingo (Andes de Carabaya, 6000 feet), November 1901, *G. Ockenden* ; paratype ♀ (Fletcher Colln. 10223), also from San Domingo, May 1902.

The description is taken from the type, except for the portions within square brackets, taken from the paratypes, which show these characters more clearly.

O. chionoptila is superficially rather like *O. hololeucos* Zeller, 1874, from Chile, but in the latter the labial palpus is shorter, the black dots near base of cleft of fore-wing are wanting, and the third segment of hind-wing lacks the black scales characteristic of *chionoptila* ; Zeller's description also makes no mention of any hairs on the hind-tibia.

DESCRIPTIONS OF SOME OF MOTSCHOULSKY'S TYPES OF ORIENTAL STAPHYLINIDAE (COL.)

By Malcolm Cameron, M.B., R.N., F.R.E.S.

In the year 1933 I was fortunate in being able to examine several of Motschoulsky's types of Oriental Staphylinidae (see 1933, *Ent. mon. Mag.*, **69** : 219–220 and 1934, **70** : 77–80) and I now give the descriptions of some of them. It is doubtful whether either Kraatz or Fauvel were familiar with these insects, judging from the determinations sometimes made. The descriptions do not include the Aleocharinae, which are dealt with in 1939, *Faun. Brit. India*, Staphylinidae, **4**. Many of the specimens are in poor condition, having been attacked by fungus.

Oxytelinae.

Holosus mycetoporiformis Motsch. 1857, *Bull. Soc. Nat. Mosc.* **30** (4) : 500.

Shining, dark red, the elytra black; head at the sides and front margin narrowly black, thorax with all the margins narrowly black and along the middle with a narrow blackish line and an indefinite blackish spot adjacent to the lateral fossa internally. Antennae and legs reddish. Length 5 mm.

Head rather finely, moderately closely punctured and with very fine transverse ground sculpture. Antennae short, the 3rd segment longer than the 2nd, 4th as long as broad, 5th to 10th strongly transverse. Thorax transverse (3·75 : 2·75), the sides very slightly rounded, widest about the middle, not at all sinuate before the posterior angles, a little more retracted in front than behind, at the posterior angles with a large impression reaching in front almost to the middle; without median impressed line or fossae, the sculpture scarcely differing from that of the head. Elytra longer than the thorax (3·5 : 2·75), the sutural stria distinct, between it and the suture with some scarcely perceptible punctures, elsewhere much as on the thorax, but without ground sculpture. Abdomen gradually narrowed towards the apex, the first three visible tergites each with about nine oblique striae on either side which are connected with each other by distinct striae at right angles to them, forming a reticular pattern; ground sculpture fine and coriaceous.

Two specimens labelled Type.
Ind. or. Without further indication.

Holosus olisthaeriformis Motsch. 1857, *Bull. Soc. Nat. Mosc.* **30** (4) : 500.

Shining, black, the posterior margins of the tergites very narrowly reddish. Antennae dark reddish-brown. Legs red. Length 6 mm.

Differs from *mycetoporiformis* in the larger size, black colour, longer antennae with less transverse penultimate segments, longer, less transverse thorax with much less distinct lateral fossae, but with an extremely fine impressed median line, the puncturation of the fore-parts very much finer, the abdomen with more numerous lateral striae which, however, are not connected with each other.

Three specimens labelled Type.
Ind. or. Without further indication.

Thoracophorus subnitidus Motsch. 1859, *Étud. Ent.* **8** : 66.

This species is a *Tetrapleurus*.

Moderately shining; head black, thorax dark brown, elytra and abdomen reddish-brown. Antennae dark reddish-brown. Legs reddish-yellow. Length 2·3 mm.

A little broader than *rugosus* Fauv., darker coloured, the antennae much stouter; thorax more transverse, the sides more rounded and dilated in front and more retracted behind, the fossae different; elytra with well marked and complete humeral ridge; abdomen with short, interrupted longitudinal keels on each side. Head narrower than the thorax, broadly and superficially impressed on each side, internal to the antennal tubercle above the eye with a fine keel; vertex in the middle rather broadly longitudinally impressed, in front of it with a group of small punctures, all the impressions and base closely and superficially punctured, and coriaceous. Antennae short and stout, the 4th to 6th segments moniliform, 7th to 10th gradually more transverse. Thorax transverse, the sides rounded and dilated in front, straighter and retracted behind, finely crenulate, deeply transversely impressed before the base, in the middle in front longitudinally sulcate and on each side of the sulcus, foveate; along the posterior part of the lateral margin deeply longitudinally impressed, and in front of this impression with a shallower rounded impression; the impressions, except the postero-lateral ones, moderately finely, closely and rugosely punctured, coriaceous. Elytra nearly twice as long as the thorax, each with four keels, the sutural connected with the 3rd behind the 2nd, finely rugose between the keels, these smooth, the whole with distinct ground sculpture. Abdomen with short keels at the sides of the tergites, coriaceous, scarcely punctured.

A single specimen.

Ceylon : Neuralia.

Arpedium (?) *pallens* Motsch. 1857, *Bull. Soc. Nat. Mosc.* **30** (4) : 493.

This insect, described with some doubt by Motschoulsky as an *Arpedium*, appears from its general facies, antennal structure and structure of the middle tarsi (the posterior are absent) to belong to the genus *Phloeonomus*.

Moderately shining, yellowish-red, the elytra yellow. Antennae and legs reddish-yellow. Length 3 mm.

Subdepressed, oval oblong. Head subtriangular, narrower than the thorax, temples absent, on the vertex just before the base with a superficial rounded impression, distinctly coriaceous and with very few small punctures. Antennae with the 3rd segment a little longer than the 2nd, 4th a little longer than broad, 5th moniliform, 6th to 10th gradually more transverse. Thorax transverse (6·5 : 4·25), the sides evenly rounded, the posterior angles obtusely rounded, the disc before the base with a feeble crescentic impression, moderately finely, rather closely punctured, distinctly coriaceous. Elytra broader and twice as long as the thorax, less finely and more closely punctured and without ground sculpture. Abdomen with the sides slightly rounded, narrowed at apex, coriaceous and with a few fine punctures. Middle tibiae spinose.

A single specimen.

Bombay.

Osorius rufipennis Motsch. 1857, *Bull. Soc. Nat. Mosc.* **30** (4) : 508.

This species is a *Mimogonus*.

Shining, head black, thorax and abdomen pitchy-black, the posterior margins of the tergites very narrowly reddish; elytra red. Antennae and legs reddish. Length 3 mm.

Size and build of *fumator* Fauv., but with stouter and longer antennae, the head with similar puncturation and ground sculpture, the thorax similarly formed, but with the fossa at the posterior angles much less distinct, the puncturation deeper, but the ground

sculpture similar : elytra longer, a fourth longer than the thorax, the puncturation coarser, deeper and closer, the ground sculpture as in *fumator*: abdomen with coarser sculpture than in that species.

A single specimen.
IND. OR. Without further indication.

Osorius punctulatus Motsch. 1857, *Bull. Soc. Nat. Mosc.* **30** (4) : 508.

Colour and build of *rufipes* Motsch., but smaller (3 mm.) and narrower, the striae on the head finer and more interrupted, the front flat and not striate, but with a few fine asperate punctures, the margin very feebly broadly emarginate; thorax more finely, much more closely punctured; elytra with finer, closer and more superficial punctures; abdomen with finer punctures, less shining.

A single specimen.
IND. OR. Without further indication.

STENINAE.

Stenus (*Hemistenus*) *pictus* Motsch. 1857, *Bull. Soc. Nat. Mosc.* **30** (4) : 515.

In the *Faun. Brit. Ind.* STAPHYLINIDAE **1** : 351, not having then seen the type of *pictus*, I regarded *paederinus* Champ. as this species, but find, on comparison with the type, that the two insects are distinct.

S. pictus differs from *paederinus* in the more slender build, less coarsely punctured thorax, much more coarsely punctured elytra and much more finely punctured abdomen. The antennae are now wanting.

A single specimen. A *Hypostenus*.
IND. OR. Without further indication.

Stenus (*Hemistenus*) *fulvescens* Motsch. 1857, *Bull. Soc. Nat. Mosc.* **30** (4) : 515

A *Hypostenus*.

Shining, yellowish-red, the last two abdominal tergites black; first five segments of the antennae reddish-yellow (rest wanting). Legs reddish-yellow. Length 4·25 mm.

Head broad, broader than the base of the elytra, in the middle before the base with an impunctate shining plaque, elsewhere moderately coarsely and closely punctured. Antennae with the 3rd to 5th segments long and slender. Thorax with the sides evenly rounded, widest at the middle, without impressions, coarsely and closely punctured. Elytra at the suture as long as the thorax, a little dilated towards the apex and there broadly emarginate, closely and yet more coarsely punctured. Abdomen narrower than the elytra, narrowed towards the apex, the segments strongly constricted at their bases, closely and moderately coarsely punctured, the last two segments much more finely and sparingly.

One example.
IND. OR. Without further indication.

Stenus (*Hypostenus*) *bivulneratus* Motsch. = *rajpurianus* Cam.

Stenus (*Hypostenus*) *piliferus* Motsch. 1857 = *tricarinatus* Kr. 1859.

PAEDERINAE.

Pinophilus pilicollis Motsch. 1857, *Bull. Soc. Nat. Mosc.* **30** (4) : 516.

Moderately shining, dark ferruginous red, the posterior margins of the abdominal tergites narrowly lighter. Antennae wanting. Legs reddish-yellow. Length 6·5 mm.

Head nearly as broad as the thorax, temples absent; a triangular space in front nearly impunctate, elsewhere with moderately fine, not very close umbilicate punctures; ground

sculpture absent. Thorax scarcely longer than broad, the sides nearly straight, retracted behind, at the middle of the base with a short shining keel, the puncturation umbilicate, a little coarser and distinctly closer than on the head; ground sculpture absent. Elytra parallel, as broad as and scarcely longer than the thorax, as closely but more coarsely punctured. Abdomen closely, moderately finely, asperately punctured on the anterior segments, gradually more finely and sparingly behind. Pubescence throughout greyish.

IND. OR.

This insect is distinct from the species referred to under this name in 1931, *Faun. Brit. Ind.* STAPHYLINIDAE **2** : 18 on the authority of a specimen determined by Fauvel as *pilicollis* and which I now designate as *falsus* nom. n. The synonymy is therefore :—

Pinophilus falsus nom. n.

pilicollis Cam., 1931, *Faun. Brit. Ind.* STAPHYLINIDAE **2** : 18 (*nec* Motschoulsky).

Paederus pilifer Motsch. 1859, *Étud. Ent.* **8** : 74.

Head black, thorax and first four visible tergites red, the last two black; elytra blue. Antennae with the first three segments reddish-yellow, the following five black, the rest wanting. Legs black, the coxae and basal half of the femora reddish-yellow, tarsi brown. Length 6·5 mm.

Remarkable in being rather closely covered by long erect black setae. In build and antennal structure resembling *tamulus* Er., the puncturation of the head very similar; thorax finely and moderately closely punctured at the sides; elytra much more coarsely but less closely punctured than in *tamulus*, the abdomen less finely punctured than in that species.

TRANQUEBAR.

Stiliderus Motsch. 1858, *Bull. Soc. Nat. Mosc.* **31** (2) : 639 = *Psilotrachelus* Kr. 1859, *Arch. Naturges.* **25** : 124.

Stiliderus cicatricosus Motsch. 1858, *Bull. Soc. Nat. Mosc.* **31** (2) : 639.

Very near *crassus* Kr. Of the same size, colour and antennal structure, but the head less coarsely punctured, thorax a little narrower, the anterior angles obtuse but not everted, as in *crassus*; elytra shorter, equally coarsely punctured, but without any granular sculpture in the interspaces; abdomen less distinctly punctured.

BURMA.

Cryptoporus flavipes Motsch. 1858, *Bull. Soc. Nat. Mosc.* **31** (2) : 655.

Near *Medon parkeri* Cam., but a little broader, more shining, thorax shorter, head much less closely punctured, thorax more coarsely, less closely punctured, and with fine impressed line along the middle, elytra more coarsely punctured. Abdomen with the posterior margin of the 7th and whole of 8th segments reddish. Length 7 mm.

IND. OR.

Lithocharis (?) *humeralis* Motsch. 1858, *Bull. Soc. Nat. Mosc.* **31** (2) : 644.

Three specimens representing three distinct species of *Medon*. Two of them are labelled *humeralis*, the first agrees better with the description than the other, and I therefore regard it as the type.

Size and build of *leai* Cam., but more shining, the penultimate segments of the antennae a little shorter, the elytra obscurely but more extensively reddish, the abdomen not so black, the smooth median line of the thorax broader and produced almost to the anterior margin; sculpture of the head similar to that of *leai*, except on the vertex, where it is finer and a small smooth area is present : thorax with simple sculpture but a little coarser, and not quite so close, whereas in *leai* it is granular : elytra with a similar but not quite such close sculpture as in that species. Length 5 mm.

IND. OR. Without further indication.

The description of *humeralis* Motsch. in 1931, *Faun. Brit. Ind.* STAPHYLINIDAE **2** : 141 was taken from a specimen which was so determined by Fauvel, certainly erroneously, the name must therefore be changed as below :—

Medon lombokianus nom. n.

Medon humeralis Cam., 1931, *Faun. Brit. Ind.* STAPHYLINIDAE **2** : 141 (*nec* Motschoulsky).

Lithocharis flavescens Motsch. 1858, *Bull. Soc. Nat. Mosc.* **31** (2) : 643.

This insect is a *Scimbalium*.

Shining, entirely reddish-yellow. Antennae and legs reddish-yellow. Length 3·75 mm.

Smaller and narrower than *indicum* Epp., more sparingly, less finely punctured. Antennae shorter, the penultimate segments moniliform. Thorax with a double row of irregular punctures on each side of the broad, smooth median space, the punctures small and superficial. Elytra a little longer than the thorax, with fine, sparing, asperate punctures. Abdomen with a fine, sparing, distinctly asperate puncturation.

IND. OR. Without further indication.

Scopaeoneus fulvescens Motsch. 1858, *Bull. Soc. Nat. Mosc.* **31** (2) : 642. (*Scopaeus.*)

Size and colour of *puberulus* Kr., build of *procerus* Kr., but with the head rather narrower, its sculpture scarcely different from *puberulus*, but with the thorax more finely and less closely punctured, especially towards the sides, where it gradually becomes very fine and more obsolete. Elytra more finely punctured than in *puberulus*, the penultimate joints of the antennae a little longer than in that species.

IND. OR. Without further indication.

Scopaeoneus thoracicus Motsch. 1858, *Bull. Soc. Nat. Mosc.* **31** (2) : 641.

Colour, build, and antennal structure of *andrewesi* Cam., the head as in that species, emarginate behind, but the puncturation finer and less close, not at all rugulose and more shining; thorax as in *andrewesi*, the sculpture dense and rugulose and without trace of a smoother middle line; elytra less densely, more finely and less roughly sculptured, especially behind.

IND. OR. Without further indication.

STAPHYLININAE.

Gabrius badius Motsch. 1858, *Bull. Soc. Nat. Mosc.* **31** (1) : 661. (preoc.) = *castaneus* Gem. et Har. Cat.

This species does not belong to the subgenus *Gabrius* but to *Philonthus s.str.*

Head black, thorax, elytra and abdomen brown, the posterior margins of the tergites reddish, the suture, posterior margin and reflexed sides of the elytra lighter. Antennae black, the first two segments and legs reddish-yellow. Length 4·75 mm.

In build similar to *minutus* Boh., but with only four punctures in the dorsal thoracic row and of lighter colour, the elytra punctured as in *minutus*, the ground sculpture throughout similar to that species. The antennae of which only the first seven segments are present are formed as in *minutus*. Length 4·75 mm. The single type is very worn.

IND. OR. Without further indication.

Rhygmacera flavipes Motsch. 1858, *Bull. Soc. Nat. Mosc.* **31** (1) : 657.

Only differs from *Acylophorus rotundicollis* Cam. in the narrower thorax and more closely, transversely rugulose sculpture of the elytra.

IND. OR. Without further indication.

A REVISION OF THE MALAYAN SPECIES OF *CHLIARIA* MRE. (LEPIDOPTERA: LYCAENIDAE)

By A. Steven Corbet, F.R.E.S.

The male genitalia of the *Chliaria* species do not differ very markedly from one species to another, and those of *C. othona* (Hew.) and *C. tora* (Kheil) are very similar. Although there is no reason for supposing that these forms are conspecific, it is worth mentioning that only in the Malay Peninsula do they fly together: *C. tora* is otherwise found in Sumatra and Borneo while in Malaysia *C. othona* has been recorded only from Malaya and Java. The Tonkin subspecies of *C. othona* is the form which most nearly approaches *C. tora*.

Chliaria Mre.

Chliaria Moore, 1884, *J. asiat. Soc. Bengal* **53** : 32. Type = *Hypolycaena othona* Hew.

Key for the separation of the Malaysian species of *Chliaria* Mre.

1(8). UnH with a prominent black spot near the base of space 7.
2(5), UnF with the post-discal band in spaces 4–7 definitely broader than in spaces 1b, 2 and 3. UnF not outwardly broadly shaded with rich orange brown.
3(4). UnF without a small black costal spot above the cell. . . . *kina*.
4. UnF with a small black spot above the middle of the cell . . *othona*.
5. UnF post-discal band almost uniformly broad throughout its length. UnF outwardly broadly shaded with rich orange brown.
6(7). UnH with a stripe of metallic green scales in space 1c running along the edge of vein 1b from the white anteterminal line to the black line anterior to the orange subtornal area. ♂ up blue, with a black, subapical border on F. ♀ up brown, with pale bluish-white tornal area on H. . . . . *tora*.
7. UnH with the orange area continuous from space 1b to 3 : only a few green scales in space 1c between the black submarginal spots in spaces 1b and 1c. ♂ up deep senna brown, with basal half of F more reddish. ♀ up brown, with white tornal area on H . . . . . *balua*.
8. UnH without a spot at the base of space 7.
9(10). UnH with a series of prominent, black, submarginal spots internal to the large black tornal spot in space 2 . . . . . *amabilis*.
10. UnH without black markings internal to the tornal spot in space 2. *merguia*.

Chliaria kina celastroides Cbt.

Hypolycaena kina Hewitson, 1869, *Ill. diurn. Lep. Lyc. Suppl.*: 13, pl. v, f. 32 ♂, 33 & 34 ♀; Darjiling.
Chliaria kina celastroides Corbet, 1938, *J. F.M.S. Mus.* **18** : 254; ♂♀, Malay Peninsula.

The species has not been found south of the Malay Peninsula. The nominotypical form is figured in Seitz (pl. 157 h 5 ♂, 6 ♂ und., 7 ♀) and also the Formosan subspecies *inari* Wileman (= *vanavasa* Fruh.) (pl. 146 h 3 ♂, pl. 157 h 9 und.). Moore's *cachara*, North Cachar Hills, is not separable from *kina* (Hew.).

Chliaria othona pahanga Cbt.

Hypolycaena othona Hewitson, 1865, *Ill. diurn. Lep. Lyc.*: 50, pl. xxii, f. 17 & 18 ♂; Assam.
Chliaria othona pahanga Corbet, 1938, *J. F.M.S. Mus.* **18** : 254; ♂, Malay Peninsula.

A male from North Malaya (Perlis, Kolam road, 6.i.1939, *J. N. Eliot*) differs from *pahanga* in that the black subapical border on the fore-wing is much

broader, being similar to that found in Malayan *C. tora*, and on the underside, which is whiter than in *pahanga*, the subapical area distal to the post-discal band and the marginal area beyond the narrow submarginal line are pale ferruginous brown. The specimen agrees well with the subspecies *matiana* Fruh. from Tonkin (Seitz, pl. 157 h 4 ♂), although this latter form has a duller and more purple upperside.

The Javanese race is *dendrobia* Roepke (Piepers & Snellen, pl. xxvii, f. 162 ♂).

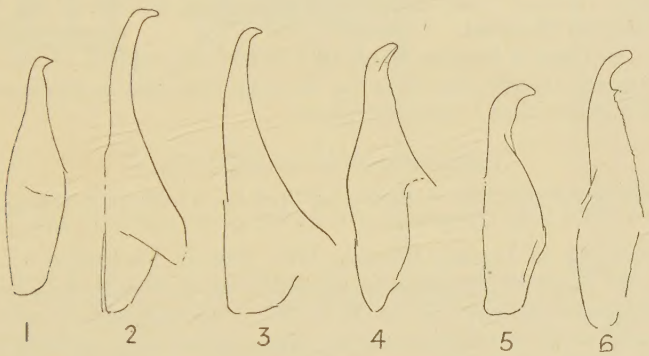
Chliaria tora semanga subsp. n.

Hypolycaena tora Kheil, 1884, *Rhop. Nias* : 31, pl. v, f. 40 ♂; Nias.

♂. Differs from the Sumatran subspecies *phataea* Fruh. (= *pumilana* v. Eecke) (Seitz, pl. 146 h 4 und., pl. 157 h 8 und.), in that, as the whole of space 2 on the fore-wing is black, a wedge of black enters the blue basal area.

Underside as in *phataea*.

Wing expanse 20·5 mm.



Figs. 1–6.—Male clasper of (1) *Chliaria kina kina* (Hew.), Burma, (2) *C. othona pahanga* Cbt., Malaya, holotype, (3) *C. tora phataea* Fruh., Sumatra, (4) *C. balua* Moult., Borneo, holotype, (5) *C. amabilis amabilis* Nic., Sumatra, (6) *C. merguia merguia* Doh., Mergui. All drawings of the same magnification.

Holotype. Malay Peninsula : Perak, i.–ii.1890 (*W. Doherty*). In British Museum, ex Colls. Elwes and Joicey. Two other males examined from Selangor and Perak.

♀. *Upperside.* Dark brown, with the tornal half of the hind-wing pale bluish-white. Of the black, interneural, submarginal spots on the hind-wing, that in space 2 is the largest, but the spots in spaces 1b and 5 (the latter coalescing with the dark ground-colour), are larger than those in spaces 1c, 3 and 4. A very narrow white anteterminal line between the pale bluish-white area and the fine black marginal line extending from the inner margin to vein 6.

Underside as in the male.

Wing expanse 26 mm.

Allotype. Malay Peninsula : Selangor, " The Gap," 2700 feet, 28.v.1937 (*C. F. Cowan*). In British Museum. Ten other females examined from various localities at different altitudes.

In a female of *phataea* from Sumatra in the British Museum, the tornal half of the hind-wing is paler blue and the black submarginal spots are smaller and less prominent.

The Bornean race *mimima* H. H. Drc. is figured in Seitz, pl. 147 b 6 ♂.

Chliaria balua gabrieli Cbt.

Chliaria balua Moulton, 1912, *J. Straits Br. R. asiat. Soc.* **6** : 151, f. 6 ♂; Sarawak.
Chliaria tora gabrieli Corbet, 1938, *J. F.M.S. Mus.* **18** : 255; ♂ *nec* "♀"; Malay Peninsula.

The discovery of Moulton's type of *balua* at the British Museum, and the examination of the *Chliaria* material collected by Messrs. Cowan and Eliot in the Malay Peninsula, has shown that *C. balua* and *C. tora* constitute two distinct species in which the underside is very similar. The unusually dark colour of the upperside of the male of *C. balua* led to my mistaking it for a female.

♀. *Upperside.* Dark brown, the basal two-thirds of the fore-wing with a ferruginous sheen, and the tornal half of the hind-wing pure white: the veins in the white area are lightly brown dusted, and of the small and rather obscure black submarginal spots that in space 2 is the largest. The hind-wing termen is defined by a very fine black marginal line.

Underside as in the male.

Wing expanse 23·5 mm.

Neallotype. Malay Peninsula: Pahang, Tras, 800 feet, 23.v.1938 (*J. N. Eliot*). In British Museum. Unique.

While *C. tora* has a minute black spot above the middle of the cell on the fore-wing beneath (rarely absent in the female), this spot is obsolete in all four examples of *C. balua* that I have examined.

Chliaria amabilis amabilis Nic.

Chliaria amabilis de Nicéville, 1895, *J. Bombay nat. Hist. Soc.* **9** : 309, pl. P, f. 42 ♂; Java.
Chliaria amabilis Seitz, 1926, *Grossschmett. Erde* **9** : 981, pl. 157 h 10 ♂, 11 und., i 1 ♀.

A female taken at Penang (Penang Hill, 2300 ft., 7.iv.1938, *C. F. Cowan*) agrees with the figure of the upperside in Seitz but is darker than in the female figured in Piepers & Snellen, pl. xxvii, f. 161: the underside is as in the male but the ground-colour is whiter and the orange-brown shading in the apical half of the fore-wing is more ochreous. The Bornean subspecies *phemis* H. H. Drc. is figured in Seitz, pl. 147 b 7 ♂.

Chliaria merguia skapane (H. H. Drc.).

Chliaria merguia Doherty, 1889, *J. asiat. Soc. Bengal* **58** : 427, pl. xxiii, f. 2 ♂; Mergui.
Hypolycaena skapane H. H. Druce, 1895, *Proc. zool. Soc. Lond.* **1895** : 604, pl. xxxiii, f. 16 ♂, 17 ♀; North Borneo, Kina Balu.
Chliaria merguia skapane Seitz, 1926, *Grossschmett. Erde* **9** : 981, pl. 147 b 4 ♂, 5 ♀.

A male from Johore (Lombong, 20.iii.1938, *C. F. Cowan*) differs from male *skapane* from Borneo in that the black subtornal spot in space 2 on the hind-wing beneath is only very narrowly edged with orange. The British Museum has a further male from Perak (i.–ii.1890, *W. Doherty*), ex Coll. Elwes.

Other Malaysian subspecies of *C. merguia* are *histiaea* Fruh., North-east Sumatra (Seitz, pl. 157 g 10 und.) and *palpatoris* Fruh. West Java (Seitz, pl. 159 g 9 ♂; Piepers & Snellen, pl. xxvii, f. 160 ♂): *sobanas* Fruh., West Borneo, is not known to me, but it may fall to *skapane* (H. H. Drc.).

Of the *Chliaria* forms mentioned in this paper, the following types have been examined in the British Museum: *balua* Moult., *cachara* Mre., *inari* Wileman, *matiana* Fruh., *phataea* Fruh., *vanavasa* Fruh. and those denominated by Hewitson.

Once again it is a pleasure to acknowledge my indebtedness to Captains C. F. Cowan and J. N. Eliot for the loan of specimens and notes.